

WHAT IS CLAIMED IS:

CLAIM 1. In a CMP apparatus comprising a polishing pad having a working-surface section and a nonworking-surface section, a platen for holding said polishing pad, and means for securing said polishing pad to said platen, the improvement comprising:

said means for securing said polishing pad to said platen comprising hook-and-pile fastening means;

said hook-and-pile fastening means comprising a first portion attached to said polishing pad, and a second portion attached to said platen for mating with said first portion.

CLAIM 2. The CMP apparatus according to claim 1, wherein said polishing pad comprises a nonporous polishing pad;

said means for securing comprising first adhesive means on said nonworking-surface section of said polishing pad for attaching said first portion to said polishing pad, and second adhesive means on said platen for attaching said second portion to said platen.

CLAIM 3. The CMP apparatus according to claim 1, wherein said polishing pad comprises a porous polishing pad;

said polishing pad comprising a thermoplastic boundary layer on said nonworking-surface section of said polishing pad;

said means for securing comprising first adhesive means attached to said thermoplastic boundary layer on said nonworking-surface section of said polishing pad for attaching said first

portion to said polishing pad, and second adhesive means on said platen for attaching said second portion to said platen.

CLAIM 4. The CMP apparatus according to claim 1, wherein said hook-and-pile fastening means has shear strength in the range of 50-250 kPa, and peel strength in the range of 0.2-0.6 N/m.

CLAIM 5. The CMP apparatus according to claim 4, wherein said hook-and-pile fastening means is made of CMP-non-degradable material.

CLAIM 6. The CMP apparatus according to claim 1, wherein said polishing pad comprises a porous polishing pad;

said nonworking-surface section of said polishing pad comprising a bonding layer fused thereto; said means for securing comprising first adhesive means attached to said bonding layer for attaching said first portion to said polishing pad, and second adhesive means on said platen for attaching said second portion to said platen.

CLAIM 7. The CMP apparatus according to claim 6, wherein said bonding layer is made of a water-impervious material in order to prevent CMP slurry from contacting said first and second adhesive means, having a thickness of between .025-.050 mm.

CLAIM 8. The CMP apparatus according to claim 1, wherein said first portion of said hook-and-pile fastening means comprises the hook-portion thereof having hooks, and said second

portion of said hook-and-pile fastening means comprises the pile-portion thereof having loops; said hooks of said hook-portion of said hook-and-pile fastening means being relatively stiff, and said loops of said pile-portion of said hook-and-pile fastening means being relatively soft.

CLAIM 9. The CMP apparatus according to claim 8, wherein said hooks and piles of said hook-and-pile fastening means provide a shear strength in the range of 50-250 kPa, and peel strength in the range of 0.2-0.6 N/m.

CLAIM 10. In a polishing pad for use in a CMP apparatus, said polishing pad having a working-surface section and a nonworking-surface section, and means for securing said nonworking-surface section to a platen of a CMP apparatus, the improvement comprising:

said means for securing said polishing pad comprising a portion of a hook-and-pile fastening means, and attaching means on said nonworking-surface section of said polishing pad for attaching said portion to said polishing pad, whereby said portion of a hook-and-pile fastening means cooperates with the mating portion of a hook-and-pile fastening means for removably attaching said polishing pad to a platen.

CLAIM 11. The polishing pad according to claim 10, wherein said polishing pad comprises a porous polishing pad; said attaching means comprising a bonding layer fused to said nonworking-surface section, and an adhesive layer between said portion of said hook-and-pile fastener means and said bonding layer.

CLAIM 12. The polishing pad apparatus according to claim 10, wherein said polishing pad comprises a nonporous polishing pad;
said attaching means comprising adhesive means on said nonworking-surface section of said polishing pad for attachment to said portion.

CLAIM 13. A method of securing a polishing pad to a platen of a CMP apparatus, the polishing pad having a working-surface section and a nonworking-surface section, the polishing pad comprising a first portion of a hook-and-pile fastening means attached to the nonworking-surface section, and the platen comprising a pad-supporting surface having a second, mating portion of the hook-and-pile fastening means, said method comprising:

(a) removably attaching the nonworking-surface section of the polishing pad to the pad-supporting surface of the platen;

(b) said step (a) comprising attaching the first portion of the hook-and-pile fastening means to the second portion of the hook-and-pile fastening means.

CLAIM 14. The method of securing a polishing pad to a platen of a CMP apparatus according to claim 13, further comprising:

(c) after said step (a), removing the polishing pad from the platen when the polishing pad has become worn;

(d) said step (c) comprising peeling the first portion of the hook-and-pile fastening means from the second portion of the hook-and-pile fastening means.

CLAIM 15. The method of securing a polishing pad to a platen of a CMP apparatus according to claim 14, further comprising:

(e) removably attaching the nonworking-surface section of another, new said polishing pad to the pad-supporting surface of the platen of said step (a);

(f) said step (e) comprising attaching the first portion of the hook-and-pile fastening means of the nonworking-surface section thereof to said second portion of the hook-and-pile fastening means used in said step (b).